ABSTRACT OF THE DISCLOSURE

A system and method for communication monitoring in a mobile radio network uses a distributed system having one or more processing devices coupled to different links of a serving switching entity of the mobile radio network. The processing devices extract current deciphering parameters from data on the different links, including an additional deciphering parameter set obtained from a subscriber data base entity, from the data flow of the connection, and from each packet data unit as the sequence number of data packets (PDUs) making up the data. The current deciphering parameters are stored in a deciphering parameter providing device so they are available for other processing devices upon request, the deciphering parameter providing device being coupled to the processing device(s) by a communication link such as a LAN or WAN. The data on the different links, if ciphered, are deciphered by the processing device and combined with delayed unciphered portions of the data to form an ordered data flow as deciphered data. A deciphered data providing device, also coupled to the processing device(s) by the communication link, receives the deciphered data and provides it as an output for further processing. A mobile subscriber moving from one service area to another has the deciphering parameters established at set-up or renewed attach stored in the deciphering parameter providing device of one service switching entity which then may provide the deciphering parameters to all the processing devices querying them.